APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,704	01/18/2001	Shiao-Li Tsao	EM/TSAO/6419	4749

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EXAMINER
LAM, DANIEL K

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/761,704	TSAO, SHIAO-LI
	Examiner	Art Unit	
	Daniel K Lam	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _18 January 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-18_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-6,8-13 and 15-17_ is/are rejected.

7)☒ Claim(s) _7, 14, and 18_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _18 January 2001_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because, in fig. 6, "source address and destination address" legend is reversed. Corrected drawing sheet is required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

    A person shall be entitled to a patent unless –

    (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

    The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined

under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C.

102(e)).

3. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Pat. No.

6,711,147 issued to Barnes et al (hereinafter Barnes).

Regarding **claim 1**, Barnes discloses an IP packet tunneling method in a

mobile GPRS data communication network, comprising the steps of:

a) GSN/HA 254 supports an IP tunnel 262 to a security gateway 264 (see fig. 4).

The IP tunnel 262 is used for signaling and data transfer between one or more

GSNs. The IP tunnel 262 continues through the security gateway 264 to the

mobile IP network 14. IP Security uses a Security Parameter Index for

identifying a security context between a pair of nodes (using a tunneling

protocol to set up tunneling information and uniquely identify a tunnel in a

signaling procedure). See col. 4, lines 13-18, and col. 7, line 64 to col. 8, line 5.

b) For data transmission procedure, Mobile IP uses Home Agent HA 106a and

Foreign Agent FA 106c IP addressing mechanisms for routing packets from

one node to another. It does not use tunneling protocol in the packet (using

information provided by an addressing mechanism of a packet itself to tunnel

the packet from one routing node to another with the tunneling information and

the uniquely identified tunnel provided by step (a) in a data transmission

procedure, so as not to use a tunneling protocol in the packet). See fig. 2, and

col. 3, lines 17-19, and lines 32-37.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the differences
> between the subject matter sought to be patented and the prior art are such that
> the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said
> subject matter pertains. Patentability shall not be negatived by the manner in
> which the invention was made.

5. **Claims 2-5, 8-12, and 15** are rejected under 35 U.S.C. 103(a) as being

unpatentable over U. S. Pat. No. 6,711,147 issued to Barnes et al (hereinafter

Barnes) in view of U. S. Pat. No. 6,505,047 issued to Palkisto.

Regarding **claims 2 and 9**, although Barnes discloses the limitations in

claims 1 and 8 discussed earlier, he does not disclose explicitly the addressing

mechanism of the packet has a length and identification for being used to replace

the length and sequence number required by the tunneling protocol.

However, it is well known in the art that the IP header contains total length and

identifier fields and, in order to deliver data packets reliably, sequence number is

needed in each data packet. Therefore, it would have been obvious to those

having ordinary skill in the art, at the time of invention, to use the Mobile IP

tunneling protocol for setting up the IP tunnel, to use the IP addressing

mechanism to tunnel the packet from one routing node to another so as not to use

a tunneling protocol in the packet, and to replace the total length and

identification fields in the IP header with the length and sequence number of the

tunnel protocol for a key reason. Replacing the total length and identifier fields

with the length and sequence number of the tunneling protocol will allow the

SGGN and GGSN to route the mobile-terminated data packets since the standard

GGSN and SGSN communicate with each other by way of tunnel. Furthermore

the SGSN and GGSN have a routing table in their databases as taught by Palkisto.

See col. 3, lines 20-22.

Regarding **claims 3 and 10**, in addition to disclose the limitations in

claims 1 and 9 discussed earlier, Palkisto further discloses the new SGSN sends

update PDP context request message (see fig. 2) which includes, a tunnel

identifier, TID, for context identification (packet data protocol (PDP) context and

mobility management (MM) context on routing nodes of the mobile data network

are associated with a unique tunnel identifier to uniquely identify a tunnel). See

col. 6, lines 20-25.

Regarding **claims 4 and 11**, in addition to disclose the limitations in

claims 3 and 10 discussed earlier, Barnes further discloses when mobile node 12

is in a foreign network, it registers with its home agent with either a foreign agent

care-of address or co-located care-of address (the PDP context has a tunneling

PDP address flag, a tunneling PDP address and a PDP address, and one of the

tunneling PDP address and PDP address is selected based on the tunneling PDP

address flag). See fig. 3, and col. 3, lines 43-49.

Regarding **claims 5 and 12**, in addition to disclose the limitations in

claims 4 and 11 discussed earlier, Palkisto further discloses a PDP context

activation procedure for building a tunnel between a GGSN and a SGSN (the

tunnel is uniquely identified by a PDP context activation procedure). See fig. 4,

and col. 6, line 59 to col. 7, line 7.

Regarding **claim 8**, in addition to disclose the limitations in claim 1

discussed earlier, Palkisto further discloses a SGSN node with GPRS registration

service 52 and implementing data transmission and transport services 53 using

GTP and UPD/IP protocols (a general packet radio service (GPRS) system and

Internet protocol (IP) based network addressing and routing mechanisms for

providing packet transmission service). See fig. 5, and col. 7, lines 8-12, lines 35-

37, and lines 44-46.

Regarding **claim 15**, in addition to disclose the limitations in claim 14

discussed earlier, Barnes further discloses the network has at least a gateway

GPRS support node (GGSN) (see fig. 3 reference 40) and serving GPRS support

node (SGSN) (see fig. 3 reference 30) for transmitting packets between a terminal

equipment and a mobile station. Furthermore, Barnes also discloses an enhanced

GSN/HA (see fig. 4 reference 254) and another enhanced GSN/FA (see fig. 4

reference 258).

6. **Claims 6, 13, 16, and 17** are rejected under 35 U.S.C. 103(a) as being

unpatentable over U. S. Pat. No. 6,711,147 issued to Barnes et al (hereinafter

Barnes) in view of U. S. Pat. No. 6,505,047 issued to Palkisto in further view of

GTP protocol specification, V3.0.0, 1999-05.

Regarding **claims 6 and 13**, although Barnes and Palkisto disclose

limitations in claims 5 and 12 discussed earlier, they do not explicitly disclose the

PDP context activation procedure requests a dynamic PDP address, the network

responses an unused PDP address for being used as a tunnel identifier. But the

GTP protocol specification discloses that a mobile station can request either a dynamic or a static PDP address. If a dynamic PDP address is requested and is allowed then a dynamic PDP address will be allocated. See section 7.5.1, paragraph 4, lines 1-2. Furthermore, Barnes discloses there are 2 types of care-of addresses, namely, foreign agent care-of address and collocated care-of address that can be assigned to a mobile station for identifying the end-point of a tunnel. See col. 3, lines 43-49.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to return an unassigned dynamic PDP address if it is requested during the PDP context activation procedure for couple of key reasons. Firstly, identifying a tunnel with a care-of address, the home agent will be available to forward packets from any nodes in a network to the mobile station as taught by Barnes. See col. 3, lines 50-55. Secondly, dynamically assigning PDP address will allow the mobile station to return the address if it no longer needs it.

Regarding **claims 16 and 17**, in addition to disclose the limitations in claim 15 discussed earlier, Barnes further discloses, when the PDP address (claim 16) or the tunneling PDP address (claim 17) is used as a tunnel identifier and the terminal equipment intends to route packets to the mobile station (see fig. 3):

- The packet from the terminal equipment (see reference HOST 150) first routed to the GGSN (see reference GGSN 40) as in claims 16 and 17.

- The GGSN replaces the destination PDP address with a private PDP address of the mobile station (claim 16) or with a tunneling PDP address after checking a PDP context table (claim 17). GGSN encapsulates the packet and

sends it to the SGSN via INTRA-PLMN BACKBONE 204 (see col. 6, lines

46-49).

- After receiving the packet, the SGSN (see reference SGSN 30) opens the

  packet, decodes the destination PDP address, and searches PDP context on a

  SGSN database based on the PDP address (claim 16) or the tunneling PDP

  address (claim 17), and forward the packet to mobile station 12 via BSS 16.

Allowable Subject Matter

7. **Claims 7, 14, and 18** are objected to as being dependent upon a rejected base

   claim, but would be allowable if rewritten in independent form including all of the

   limitations of the base claim and any intervening claims.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the

   examiner should be directed to Daniel K. Lam whose telephone number is (703)

   305-8605. The examiner can normally be reached on Monday-Friday from 8:30

   AM to 4:30 PM.

   If attempt to reach the examiner by telephone are unsuccessful, the

   examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax

   phone number for this Group is (703) 872-9314.

   Any inquiry of a general nature or relating to the status of this application

   or proceeding should be directed to the Group receptionist whose telephone

   number is (703) 305-4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status Information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKL: *dkl*
June 19, 2004

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 6/23/04